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Inside Wallops

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IMP-8 Spacecraft Celebrates 25 Years On Duty

WOTS Provides Tracking

The Interplanetary Monitoring Platform (IMP-8) spacecraft continues to make valuable observations a quarter century after its launch on Oct. 25, 1973. IMP-8, built and operated at Goddard Space Flight Center and tracked by the Wallops Orbital Tracking Station (WOTS), provides important space physics data as part of NASA's Sun-Earth Connections research program.

Internet image of the IMP-8 spacecraft.

"IMP-8 is the Cal Ripken of spacecraft. Space is a very harsh environment to work in, with radiation and temperature extremes. Nevertheless, Goddard engineers made IMP-8 so well that it is still active and contributing importantly today," said Dr. Joseph King, project scientist for IMP-8 at Goddard.

Over the past 25 years, more than one thousand scientific papers have been published in the refereed scientific literature in which IMP-8 data were the sole data used or were important adjuncts to data from other missions.

IMP-8 has deepened understanding of the space environment near Earth in many ways. Observations from IMP-8 provided insight into plasma physics, the Earth's magnetic field, the structure of the solar wind and the nature of cosmic rays.

"The same fleet of interplanetary spacecraft that worked with IMP-8 to study the solar wind also used IMP-8 as the anchor point near Earth to determine how solar wind variability and the large scale structure of the interplanetary magnetic field affect the motion and number of cosmic rays able to penetrate to the inner solar system," said King.

Plasma "clouds" in the solar wind occasionally slam into the region of space occupied by the Earth's magnetic field, called the magnetosphere. Processes associated with the physics of plasma trapped in the magnetosphere cause geomagnetic storms and substorms. Intense auroral displays, magnetic field fluctuations, and occasional power system disruptions are associated with these storms. IMP-8 observations, in coordination with a fleet of spacecraft from the International Solar Terrestrial Physics program, enhanced understanding of how the solar wind causes these events.

IMP-8's longevity presented operational challenges for Goddard.

"It has been satisfying to exploit new technologies to expedite, and make less costly, IMP data flow. However, IMP has had no choice but continue to use the now largely obsolete VHF telemetry frequencies. (IMP is not Space Shuttle-accessible, as is the Hubble Space Telescope, whereby onboard technologies can be swapped out by new ones.) The communication network that originally captured IMP-8 data, known as the Spaceflight Tracking and Data Network, was largely disestablished many years ago. One of the key challenges to the IMP Project over the past 15 years has been to define and evolve an ad hoc IMP-8 VHF telemetry capture network," said King.

Since the mid-80s, WOTS has been tracking IMP-8 from 8 to 16 hours a day receiving data and serving as a throughput to the project control center at Greenbelt. WOTS also is used as a throughput for commands that are sent to IMP. The person-sized IMP-8 spacecraft is in a nearly circular orbit about the Earth, at a distance a little more than half way to the moon. In this orbit, IMP is in the solar wind about seven days per orbit and is within the Earth's magneto-sphere/magneto-sheath system about five days per orbit. Currently, seven of the original 12 instruments on board IMP-8 are operational.

IMP-8 was the last of the series of IMP spacecraft which included eight IMP's achieving geocentric orbit and two "anchored IMP's" intended for lunar orbit. These ten spacecraft were launched by NASA between 1963-1973. The IMP spacecraft series was a subset of the highly successful and productive Explorer spacecraft series. IMP-1 was Explorer-18 and IMP-8 was Explorer-50.

RMS Information Systems Inc. To Provide Information Technology Services

NASA has selected RMS Information Systems Inc. of Vienna, Va. to provide information technology services to the Goddard Space Flight Center under the Outsourcing Desktop Initiative for NASA (ODIN). This is the first delivery order to be issued by NASA under the Outsourcing Desktop Initiative. Under the ODIN delivery-order process, each NASA center will place orders exclusively with one vendor.

The services to be provided are comprehensive desktop computer, server and intra-center communications services to NASA Goddard employees and its contractors. The period of performance is three years beginning on Nov. 2, 1998 for a total price of $19.6 million.

Wallops Shorts.....

Bill Bott, Wallops Enivronmental Office, spoke to seniors graduating from the civil engineering program at Virginia Military Institute, Lexington, VA, on Oct. 9.

NASA and FAA Join Forces to Improve Safety and Air Traffic

NASA Administrator Daniel S. Goldin and Federal Aviation Administration Administrator Jane F. Garvey recently signed an agreement that establishes a new partnership in pursuit of improved aviation safety, airspace system efficiency and aircraft environmental concerns.

"Today more than ever, NASA's science and technology research produces results that improve our world and sustains U.S. leadership in civil aeronautics and space," said Goldin. "The agreement we signed guarantees that NASA's know-how and FAA's air transport industry expertise will be combined to provide a safer aviation system and an affordable and dependable service for all."

"The FAA will be more closely involved with NASA's aviation research program, thanks to this partnership," said FAA Administrator Jane F. Garvey. "By integrating our respective strengths, we will succeed in developing innovative technologies, concepts and products that will benefit U.S. aviation sooner rather than later."

Visitor Center November Special Events

November 7 - "Model Rocket Launch" A model rocket launch will be held at 1 p.m. Models of various rockets will be launched. Model rocketeers are invited to bring their own rockets and launch them. The launch will be canceled if it is raining or winds exceed 18 mph.

November 28 - "Flight With Wings" "Flight With Wings" is the subject of a 1 p.m. program for children 6 to 12 years of age. The 40-minute activity will look at the basic properties of flight and how airplane control surfaces manipulate flight. The children will be given the opportunity to construct several paper airplanes.

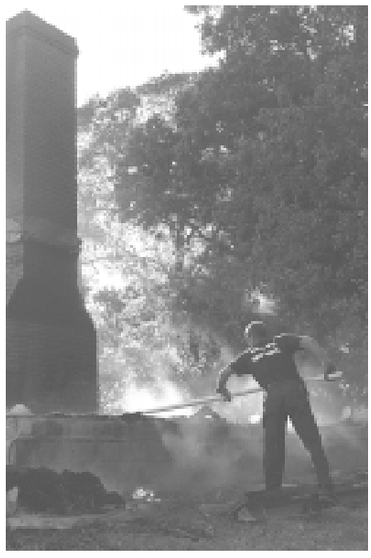
Saturdays and Sundays - "Puppets in Space", a 10-minute puppet show will be presented at the Visitor Center on Saturdays and Sundays at 11 a.m. Puppet astronauts and Sam the monkey will explore space flight, including the space suit. An eight-minute version of the film "Astrosmiles" follows the puppet show.

Sundays - "Humans in Space" is the subject of a 1 p.m. program for children of all ages. The 30-minute program looks at living and working in space, including a review of the astronauts' culinary delights and their wardrobe. The program is followed by a hands-on children's activity. Children will be given the opportunity to create their own "space helmet".

"Space Ace" - Children 5 to 10 years of age can earn a "Space Ace" certificate and a lithograph during their Visitor Center visit by completing an activity sheet.

The Visitor Center is open Thursday through Monday from 10 a.m. to 4 p.m. and closed on Tuesday and Wednesday. The Visitor Center will be closed, on Thursday, Nov. 26 for the Thanksgiving holiday. It also will be closed except for scheduled groups, Dec. 1, 1998 to Feb. 28, 1999. For further information, call (757) 824-2298.

Halloween Party
October 30
4:30 p.m.
Building F-3
Prizes will be awarded.



The home formerly occupied by the Krieger family (top) in the old Wallops housing area was burned during a controlled burn on Monday evening, Oct. 19. The single-story dwelling had not been occupied since the Kriegers moved out in September 1980 and had fallen into a state of disrepair.

"When requested to burn the structure, we saw an opportunity to do a cooperative training session with members from neighboring fire departments," said Wallops Fire Chief, Joe Conaty. "A total of 22 fire fighters, including personnel from Oak Hall Rescue, the Atlantic Fire Company and Wallops Fire Department, took part in the exercise."

Wallops firefighters perfomed cleanup duties (left) the following day.

Upcoming Training to be Held at Wallops.....

Technology Transfer and Commercialization Program
Nov. 17-19, 1998

Technology transfer and commercialization is a component of the NASA mission. If you have program or project management responsibilities, NASA NPG 7120.5A requires that you consider the commercialization of technologies resulting from your projects.

If you are a COTR, you will be responsible for enforcing the New Technology Reporting requirement in R&D contracts. If you are involved in the SBIR program, technology commercialization is receiving increasing emphasis. If you are involved in R&D, you have a vested financial interest in ensuring that your inventions are properly documented and assessed for commercial potential.

For further information contact Sherry Kleckner, X1204.

Advanced Project Management 34 Program
Nov. 30- Dec.11, 1998

If you are interested in attending, call Sherry Kleckner, x1204 for course description and nomination form. This course does require some pre-work.

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